

P802.3cy D3.0 Work Items

Natalie Wienckowski

General Motors

December 6, 2022

Comment # 541 on D2.0

- Potential Issue (165.2.2)
 - The value of L and the choice of precoding are requested by the link partner during link training - which is a PMA function. These values have to be passed to the PCS for correct encoding.
 - Since all information exchange from the PMA to the PCS is defined in terms of service interface primitives, some primitive should indicate the value of L and precoding selection.
 - The of PMA_CONFIG.indication could be expanded to include these values but I suspect it may not be straightforward, since the existing content (master or slave) is available before training starts, but the values of L and precoding are determined only later.
- Request without specific solution
 - Add a primitive as described in the comment, in the text and figures as necessary.
- Volunteer: Ragnar Jonsson
- Resolved: No change needed, see https://www.ieee802.org/3/cy/public/adhoc/jonsson_3cy_01_12_06_22.pdf

Balun

- Figure 165-27 includes a balun
- Does this need any additional requirements or specifications?
- Volunteer: Heiko Strohmeier & Rich Boyer - will put together a presentation to remove the balun and replace with higher frequency equipment available today.

Comment #781 on D2.1

- Potential Issue (165.5.3.x)
 - For some of the measurements where a high speed signal is to be observed with a scope, there should be a specified scope bandwidth. $f_b \times 3/4$ is usual. This standardizes the measurement and keeps some irrelevant instrument and DUT noise out of it.
- Request without specific solution
 - This would be beneficial for 165.5.3.2 Transmitter linearity (SNDR), 165.5.3.3.1, 2 Transmit MDI jitter in MASTER mode and 165.5.3.5, and harmless for some others such as droop.
- Volunteer: Jae-Yong Chang
- Hint: look at Bessel Thomson filter in 802.3

Comment #783 on D2.1

- Potential Issue (165.5.3.3)
 - Measuring jitter on 0.4 ms blocks with no clock recovery unit in the measurement gives an extremely low (\sim kHz) implied high-pass jitter measurement corner. 165.5.3.3.2 has $f_n = 2.5$ MHz which is much higher.
- Request without specific solution
 - Should there be a "soft" CRU function not just linear regression in the TIE analysis?
- Volunteer: George Zimmerman
- Hint: search for “corner frequency” or “jitter corner” in 802.3 for examples
- Resolved: No change needed, George “I’m still looking into the jitter test stuff, but I think Piers has it wrong. Our test isn’t the same as in the optical stuff that he references, and we don’t need the additional specification of a reference receiver – so the resolution on my part will be no comment required.”

Comment #799 on D2.1 (Out of Scope)

- Potential Issue (165.5.3.4)
 - The lower frequency ranges for the PHY, Link Segment specifications, and MDI are all over the place.
 - Starting at 0 Hz is not going to be practical for measurements of a PSD going to up to 13.75 GHz.
 - The ANEXT and AFEXT loss are constrained starting at 1 MHz - also too low for practicality.
 - The TX PSD lower bound frequency is 5 MHz - below the link segment low frequency limit of the insertion loss.
 - For all of these, going this low won't be necessary for link segments starting at 10 MHz. Suggest they be aligned at 10 MHz.
- Request
 - Change low frequency limit for Upper TX PSD mask (eq 165-6, Pg 96 line 1), Lower TX PSD mask (eq 165-7, Pg 96 line 7), PSANEXT (eq 165-35, Pg 108 line 24), and PSAFEXT (eq 165-36, Pg 109 line 18) to 10 MHz.
- Volunteer
 - George Zimmerman
 - Measurement tool experts needed
- See [Issues to Consider for Low Frequency Limit](#) for information on planned comment on D3.0.

Comment #800 on D2.1 (Out of Scope)

- Potential Issue (165.7.1.3.1)
 - Link segment return loss specifications start at 30 MHz, whereas the link segment return loss is constrained (at least) by the Insertion loss between 10 MHz and 30 MHz (at least 6.8dB RL at 10 MHz to meet the IL at 10 MHz)
 - While I've proposed a remedy, I think this needs further thought and I would be OK rejecting this comment and working on it with the TF for initial SA ballot.
- Request (Equation numbers and PL updated for D2.21)
 - Consider changing the low frequency limit for link segment return loss Eq 165-20 at pg 102 line 44 from 30 MHz to 10 Mhz and adding a frequency range from 10 Mhz to 30 MHz to Equation 165-20 with value of $[20 - 6.5 * (30-f)/10 \text{ dB } 10 \leq f < 30]$.
- Volunteer
 - George Zimmerman
- See [Issues to Consider for Low Frequency Limit](#) for information on planned comment on D3.0.

Comment #801 on D2.1 (Out of Scope)

- Potential Issue (165.8.2.1)
 - Why is the link segment return loss only to 30 MHz when the MDI return loss is constrained starting at 5 MHz? These require study and should be considered for changes at initial SA ballot. Whatever considerations are important for one RL are equally applicable to the other. It probably is not relevant to constrain the MDI RL down to 0 dB RL (which it is at 5 MHz). At 10 MHz, the lower end of the IL spec, the MDI RL is 6 dB as written.
- Request (Equation numbers and PL updated for D2.21)
 - Change MDI return loss lower limit to 10 MHz. (eq 165-40), pg 110, line 23, maintaining the existing equation, except for the frequency limit change.
- Volunteer
 - George Zimmerman
- See [Issues to Consider for Low Frequency Limit](#) for information on planned comment on D3.0.